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Oceans and the law of the sea: oceans and the law of the sea

Report on the work of the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects

Letter dated 23 March 2018 from the Co-Chairs of the Ad Hoc Working Group of the Whole addressed to the President of the General Assembly

We have the honour to transmit to you the attached report on the work of the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects, which met at United Nations Headquarters on 28 February and 1 March 2018 pursuant to paragraph 330 of General Assembly resolution 72/73. Section III of the report sets out the agreed recommendations of the Ad Hoc Working Group of the Whole to the General Assembly at its seventy-third session. Section IV of the report contains guidance for the Bureau, the Group of Experts and the secretariat of the Regular Process concerning the implementation of the second cycle of the Regular Process.

We kindly request that the present letter and the report be circulated as a document of the General Assembly under the agenda item entitled "Oceans and the law of the sea".

(Signed) Juliette **Babb-Riley**

(Signed) Minna-Liina **Lind**

* A/73/50.

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Report of the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects

I. Report of the Ad Hoc Working Group of the Whole

1. The tenth meeting of the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects was convened pursuant to paragraph 330 of General Assembly resolution 72/73. The meeting of the Working Group was held at United Nations Headquarters in New York on 28 February and 1 March 2018.

2. The Co-Chair of the Working Group, Juliette Babb-Riley (Barbados), opened the meeting. The Under-Secretary-General for Legal Affairs and United Nations Legal Counsel delivered opening remarks on behalf of the Secretary-General. Following her appointment by the President of the General Assembly as Co-Chair of the Working Group, Minna-Liina Lind (Estonia) co-chaired the meeting of the Working Group on 1 March 2018.

3. Representatives of 57 Member States,[1] one non-member State,[2] three intergovernmental organizations and other bodies[3] and one non-governmental organization[4] attended the meeting.

4. The following members of the Group of Experts, established pursuant to paragraph 287 of General Assembly resolution 70/235, also attended the meeting: Anastasia Strati (Greece), Renison Ruwa (Kenya), Chul Park (Republic of Korea) and Alan Simcock (United Kingdom of Great Britain and Northern Ireland). Renison Ruwa and Alan Simcock participated in their capacity as Joint Coordinators of the Group of Experts.

5. The following supporting documentation was available to the meeting: a provisional agenda; an annotated provisional agenda; a format; a proposed organization of work; a draft outline for the second world ocean assessment; a draft timetable and plan of implementation for the second world ocean assessment; draft guidance for contributors, part II; and elements for discussion on guidelines for the second round of regional workshops in 2018.

6. The Working Group adopted the agenda (see sect. II below) and agreed on the organization of work as proposed by the Co-Chairs.

[1] Angola, Argentina, Australia, Austria, Bangladesh, Brazil, Bulgaria, Canada, China, Colombia, Costa Rica, Cuba, Czechia, Dominican Republic, Egypt, El Salvador, Estonia, Germany, Ghana, Greece, Guatemala, Honduras, India, Indonesia, Israel, Italy, Jamaica, Japan, Kenya, Madagascar, Maldives, Malta, Mauritius, Mexico, Namibia, Nepal, Netherlands, New Zealand, Papua New Guinea, Philippines, Portugal, Republic of Korea, Romania, Russian Federation, Senegal, Sierra Leone, Singapore, Slovakia, South Sudan, Spain, Sri Lanka, Sudan, Sweden, Thailand, United States of America, Vanuatu and Venezuela (Bolivarian Republic of).

[2] Holy See.

[3] European Union, Intergovernmental Oceanographic Commission, United Nations Educational, Scientific and Cultural Organization and United Nations Secretariat (Department of Economic and Social Affairs).

[4] International Ship Managers' Association.

7. Under agenda item 4, the Co-Chair, Juliette Babb-Riley, presented the report of the Bureau of the Working Group. A number of delegations made general statements under the agenda item, welcoming the report and the intersessional work of the Bureau and expressing their appreciation for the work of the Co-Chair, the Bureau, the Group of Experts and the secretariat during the intersessional period. Delegations highlighted the successful completion of the first round of regional workshops to assist the second cycle of the Regular Process, the offers to host workshops for the second round of regional workshops, the addition of an expert to the Group of Experts, the nomination of experts to the Pool of Experts and the work towards the holding of a capacity-building event and a multi-stakeholder dialogue in 2019. A number of delegations emphasized the importance of enhancing awareness of the Regular Process and its outputs during the second cycle. The Working Group took note of the report.

8. Some delegations made general statements under agenda item 5, also expressing their appreciation for the successful completion of the first round of regional workshops held in 2017 and thanking the hosts, the Bureau, for overseeing the holding of the workshops, and the Joint Coordinators and members of the Group of Experts who participated, as well as the secretariat for its support. Appreciation was expressed in particular for the contribution of the workshops towards the elaboration of a draft outline for the second world ocean assessment, as well as for their consideration of how to make the second world ocean assessment relevant to policymakers. Delegations also noted the importance of the workshops for awareness-raising, and expressed their appreciation for the reports of the workshops for providing a comprehensive overview of the discussions.

9. Under agenda item 6, and pursuant to paragraph 330 of General Assembly resolution 72/73, the Working Group considered the draft outline for the second world ocean assessment, which was presented by the Joint Coordinators of the Group of Experts. It was recalled that in the resolution, the Assembly had noted the elements for discussion on the shape and structure of the assessment or assessments to be carried out in the second cycle of the Regular Process prepared by the Group of Experts, in accordance with the programme of work, and had decided that, in the elaboration of an outline, the Group of Experts should proceed on the basis of the preparation of a single comprehensive assessment. It was further noted that the draft elements had been presented at the first round of regional workshops, in 2017, and that the draft outline had been prepared taking into account the feedback from those workshops.

10. The Working Group noted that the General Assembly, in paragraph 294 of its resolution 71/257, had recalled that, in the first cycle, the scope of the Regular Process had focused on establishing a baseline, and had decided that the scope of the second cycle would extend to evaluating trends and identifying gaps.

11. Some delegations made proposals in relation to the draft outline for the second world ocean assessment, which were discussed by the Working Group in consultation with the Joint Coordinators of the Group of Experts, who then prepared a revised draft of the outline. The revised draft incorporated those amendments which had been proposed by the Working Group and which the Joint Coordinators had advised could be accepted consistent with the general design of the draft outline and of the guidance for contributors, part I, approved by the Working Group at its ninth meeting and taken note of by the General Assembly in its resolution 72/73. Following discussions on the revised draft outline, the Working Group approved the outline for the second world ocean assessment with the agreed amendments (see annex I) and requested the Group

of Experts to prepare an annotated outline for the second world ocean assessment for the eleventh meeting of the Working Group.

12. Under agenda item 7, the Working Group considered a draft timetable and implementation plan for the preparation of the second world ocean assessment by the Group of Experts. Following a presentation of the draft by the Joint Coordinators of the Group of Experts, the Working Group took note of the preliminary timetable and implementation plan and requested the Bureau to oversee its implementation.

13. Under agenda item 8, the Working Group considered the second part of the draft guidance for contributors, prepared by the Group of Experts pursuant to paragraph 310 of General Assembly resolution 71/257. In accordance with the terms of reference for the Group of Experts, the first part of the guidance for contributors was revised by the Group of Experts, was endorsed by the Working Group at its ninth meeting and was taken note of by the Assembly in paragraph 323 of its resolution 72/73. The Working Group took note of the guidance for contributors, part II (see annex II).

14. Under agenda item 9, the Working Group considered the second round of regional workshops. The Working Group noted that the second round of regional workshops envisaged by the programme of work for the period 2017–2020 would take place in the second half of 2018, with the objective of, inter alia, informing the collection of regional-level information and data for the preparation of the second world ocean assessment. It was noted that the secretariat had received a number of formal offers to host a regional workshop for the second round in support of the Regular Process. The Joint Coordinators presented draft elements for guidelines for the second round of workshops, which had been prepared by the Group of Experts.

15. The Working Group noted the various offers as well as the draft elements for guidelines for the second round of workshops. The Bureau was requested to finalize and adopt the guidelines for the second round of workshops in 2018, to be prepared by the Group of Experts in consultation with the secretariat, taking into account the guidelines for the first round of workshops of the second cycle of the Regular Process.

16. Under agenda item 10, the Working Group considered the activities relating to the achievement of needs-based capacity-building for the Regular Process, including the compilation and maintenance of a capacity-building inventory; the holding of workshops and their follow-up, the holding of a multi-stakeholder dialogue (with case studies of good practices) and a capacity-building partnership event, originally intended to be held in 2018 but rescheduled for early 2019; and fundraising for the Regular Process special scholarship trust fund and the implementation of the special scholarship.

17. The Working Group took note of a presentation by the Joint Coordinators on the input received from the first round of regional workshops with regard to capacity-building. It requested the Bureau, in consultation with the Group of Experts and the secretariat, to present to the eleventh meeting of the Working Group a draft annotated agenda for the multi-stakeholder dialogue and capacity-building event to be held in early 2019, taking into account inputs from States and intergovernmental and non-governmental organizations, as well as the discussions from the first round of regional workshops in support of the second cycle of the Regular Process.

18. Under agenda item 11, the Working Group considered the draft recommendations and guidance to the Bureau, the Group of Experts and the secretariat. Under agenda item 12, the Director of the Division for Ocean Affairs and the Law of the Sea reported on the status of the voluntary trust fund for the purpose of supporting the operations of the Regular Process and noted that the trust fund had

received contributions from Ireland and the Republic of Korea since the ninth meeting of the Working Group. Delegations were encouraged to continue to contribute to the trust fund and to make other contributions to the Regular Process pursuant to the appeal from the General Assembly in paragraph 329 of its resolution 72/73.

Adoption of recommendations to the General Assembly at its seventy-third session

19. The Working Group adopted by consensus the draft recommendations for the consideration of the General Assembly at its seventy-third session (see sect. III). The Working Group also adopted the guidance to the Bureau, the Group of Experts and the secretariat (see sect. IV).

II. Agenda of the tenth meeting of the Ad Hoc Working Group of the Whole

20. The Ad Hoc Working Group of the Whole adopted the agenda set out below:

1. Opening of the meeting.
2. Adoption of the agenda.
3. Organization of work.
4. Report of the Bureau of the Ad Hoc Working Group of the Whole.
5. Presentations on the outcome of the first round of regional workshops.
6. Outline for the second world ocean assessment.
7. Timetable and plan of implementation for the preparation of the second world ocean assessment.
8. Guidance for contributors, part II.
9. Second round of regional workshops.
10. Capacity-building.
11. Adoption of recommendations to the General Assembly at its seventy-third session.
12. Other matters.
13. Closure of the meeting.

III. Recommendations of the Ad Hoc Working Group of the Whole to the General Assembly at its seventy-third session

21. The Ad Hoc Working Group of the Whole recommends to the General Assembly that it:

(a) Welcome the holding of the tenth meeting of the Ad Hoc Working Group of the Whole on 28 February and 1 March 2018, in accordance with paragraph 330 of Assembly resolution 72/73;

(b) Take note of the recommendations and guidance adopted by the Ad Hoc Working Group of the Whole at its tenth meeting;

(c) Reaffirm its decision that, in the elaboration of an outline, the Group of Experts should proceed on the basis of the preparation of a single comprehensive assessment;

(d) Note the approval by the Ad Hoc Working Group of the Whole of the outline for the second world ocean assessment in accordance with paragraph 330 of resolution 72/73, attached as annex I to the present report;

(e) Take note of the preliminary timetable and implementation plan for the second world ocean assessment prepared by the Group of Experts in consultation with the secretariat of the Regular Process;[5]

(f) Take note of the guidance for contributors, part II, prepared pursuant to paragraph 310 of Assembly resolution 71/257, attached as annex II to the present report;

(g) Take note of the summaries of the first round of regional workshops in support of the second cycle of the Regular Process, held in Lisbon in September 2017, in Auckland, New Zealand, in October 2017, in Camboriú, Brazil, in November 2017, in Bangkok in November 2017 and in Zanzibar, United Republic of Tanzania, in December 2017, which informed the preparation of the outline for the second world ocean assessment and will assist in the identification of additional experts for the Pool of Experts and the identification of issues for consideration at the multi-stakeholder dialogue and capacity-building event;

(h) Note the appointment of an additional expert to the Group of Experts in accordance with paragraph 287 of Assembly resolution 70/235, and urge regional groups that have not yet done so to appoint experts, taking into account the need to ensure geographical distribution and adequate expertise in socioeconomic disciplines;

(i) Note the call for the addition of experts to the Pool of Experts for the second cycle of the Regular Process, and encourage the appointment of experts, by States and through recommendations from relevant intergovernmental organizations, to the Pool of Experts in accordance with the mechanism for the establishment of the Pool of Experts for the second cycle of the Regular Process developed by the Bureau of the Ad Hoc Working Group of the Whole in accordance with paragraph 311 of resolution 71/257;

(j) Welcome the designation by States of national focal points pursuant to paragraph 312 of resolution 71/257, and urge States that have not yet done so to designate their national focal points as soon as possible;

(k) Welcome the offers to host regional workshops for the second round of regional workshops in 2018 to support the Regular Process;

(l) Recall its invitation, in paragraph 313 of resolution 71/257, to the Intergovernmental Oceanographic Commission, the United Nations Environment Programme, the International Maritime Organization, the Food and Agriculture Organization of the United Nations, the World Meteorological Organization and relevant United Nations system organizations, bodies, funds and programmes, as appropriate, to assist in the implementation of the second cycle of the Regular Process with regard to the following activities: awareness-raising, the identification of experts for the Pool of Experts, technical and scientific support to the Bureau and the Group

[5] See "Preliminary timetable and implementation plan for the second world ocean assessment", available from www.un.org/depts/los/rp

of Experts, hosting workshops and meetings of the writing teams, and capacity-building;

(m) Also recall its invitation, in paragraph 314 of resolution 71/257, to relevant intergovernmental organizations to contribute, as appropriate, to the activities of the second cycle;

(n) Request the secretariat to continue to update the inventory of recent and ongoing assessments and other processes at the regional and global levels relevant to the Regular Process, and encourage intergovernmental and non governmental organizations to continue to provide information to the secretariat on recent and ongoing assessments and other processes at the regional and global levels relevant to the Regular Process;

(o) Also request the secretariat to continue to compile and maintain information for inclusion in the capacity-building inventory of needs and opportunities relevant for the Regular Process, and encourage States and intergovernmental and non-governmental organizations to continue to provide relevant information to be compiled and maintained by the secretariat.

IV. Guidance for the Bureau, the Group of Experts and the secretariat of the Regular Process concerning the implementation of the second cycle of the Regular Process

22. The Ad Hoc Working Group of the Whole decides to:

(a) Request the Group of Experts to prepare an annotated outline for the second world ocean assessment for the eleventh meeting of the Ad Hoc Working Group of the Whole;

(b) Request its Bureau to oversee the implementation of the preliminary timetable and implementation plan for the second world ocean assessment;

(c) Also request its Bureau to approve the list of lead members and co-lead members and the final constitution of writing teams for the preparation of the second world ocean assessment;

(d) Further request its Bureau to finalize and adopt the guidelines for the second round of workshops in 2018 to assist the Regular Process, to be prepared by the Group of Experts in consultation with the secretariat, taking into account the guidelines for the first round of workshops of the second cycle of the Regular Process;

(e) Request its Bureau to decide on the location of the five regional workshops of the second round of regional workshops on the basis of the formal offers, taking into account costs and ease of access to the venues;

(f) Also request its Bureau to oversee the appointment of additional experts to the Pool of Experts for the second cycle of the Regular Process in accordance with the mechanism for the establishment of the Pool of Experts for the second cycle of the Regular Process, developed by the Bureau of the Ad Hoc Working Group of the Whole in accordance with paragraph 311 of General Assembly resolution 71/257;

(g) Further request its Bureau, in consultation with the Group of Experts and the secretariat, to submit to the Ad Hoc Working Group of the Whole at its eleventh meeting a draft annotated agenda for the multi-stakeholder dialogue and capacity-building event to be held in early 2019, taking into account inputs from States and

intergovernmental and non-governmental organizations, as well as the discussions from the first round of regional workshops in support of the second cycle of the Regular Process;

(h) Request its Bureau to invite States and intergovernmental and non-governmental organizations to contribute to the multi-stakeholder dialogue and capacity-building event, including by sharing studies of good practice in capacity-building in support of the science-policy interface.

Annex I

Outline for the second world ocean assessment

At its meeting held from 15 to 19 January 2018, the Group of Experts of the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects developed a draft outline for the second world ocean assessment, which was considered by the Bureau of the Ad Hoc Working Group of the Whole on the Regular Process at its meeting held on 14 February 2018. The draft outline was subsequently considered by the Ad Hoc Working Group of the Whole at its tenth meeting, held on 28 February and 1 March 2018. The revised draft incorporates amendments which were proposed by the Ad Hoc Working Group of the Whole and which the Joint Coordinators of the Group of Experts advised could be accepted consistent with the general design of the draft outline and of the guidance for contributors, part I, approved by the Ad Hoc Working Group of the Whole at its ninth meeting and taken note of by the General Assembly in its resolution 72/73 on oceans and the law of the sea.

The Ad Hoc Working Group of the Whole approved the revised outline in accordance with paragraph 330 of resolution 72/73, and requested the Group of Experts to prepare an annotated outline for the second world ocean assessment for the eleventh meeting of the Ad Hoc Working Group of the Whole, scheduled to be held on 23 and 24 August 2018.

Background to the outline for the second world ocean assessment

1 Each chapter (or each section of each chapter), other than chapters 1–4, would include:

(a) A one-paragraph abstract of the chapter or section;

(b) A very short summary of the situation recorded in the First Global Integrated Marine Assessment (World Ocean Assessment I);

(c) A description of environmental changes between 2010 and 2020;

(d) A description of the economic and social consequences and/or of the other economic or social changes (including, where appropriate, changes in global distribution of benefits and disbenefits and issues relating to concepts of natural capital);

(e) A description of the main information gaps in relation to the subject matter;

(f) A description of the main capacity-building gaps in the field.

2 The proposed title of each chapter and each section of a chapter is shown in bold type. It is proposed that these would form part of the structure of the second world ocean assessment. Further subdivisions will be chosen by the writing teams. Separate writing teams may be designated for each section of some chapters. Other material under a chapter title is included as an indication of topics to be covered in that chapter or section.

3 Where appropriate, each chapter or section would review separately the situation in the various ocean regions (Arctic, North Atlantic, South Atlantic, Indian Ocean, North Pacific, South Pacific and Southern Ocean).

4 Where appropriate, each chapter will contain an explicit evaluation of how the developments described in the chapter are contributing to the achievement of relevant Sustainable Development Goals. The technical abstract of World Ocean Assessment I on the ocean and the Sustainable Development Goals under the 2030 Agenda for Sustainable Development contains a first evaluation of the Goals relevant to the various aspects of the marine environment. The writing team for each chapter will be asked to consider the Goals thus identified that are relevant to its chapter, and whether any further Goals need to be considered in that chapter. Chapter 1 (Overall summary) will include an overview of those evaluations for all relevant Goals.

Outline

Part 1: Summary

Chapter 1: Overall summary

Part 2: Introduction

Chapter 2: Approach to the assessment

(a) Purpose of the assessment

1. The General Assembly, having set up the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects in 2002, endorsed the overall objective of the Regular Process in the following terms:[1]

> The regular process under the United Nations would be recognized as the global mechanism for reviewing the state of the marine environment, including socioeconomic aspects, on a continual and systematic basis by providing regular assessments at the global and supraregional levels and an integrated view of environmental, economic and social aspects. Such assessments would support informed decision-making and thus contribute to managing in a sustainable manner human activities that affect the oceans and seas, in accordance with international law, including the United Nations Convention on the Law of the Sea and other applicable international instruments and initiatives.

2. The General Assembly further agreed that:[2]

> In the first cycle, the scope of the regular process would focus on establishing a baseline. In subsequent cycles, the scope of the regular process would extend to evaluating trends.

3. In 2016, the General Assembly endorsed the programme of work for the period 2017–2020 for the second cycle of the Regular Process,[3] which provided for:

> **Output 1: second world ocean assessment(s)**
>
> Building on the baselines established by the first global integrated marine assessment, the Group of Experts will prepare assessment(s). The process will begin with a scoping exercise in January 2017. The assessment(s) would be finalized by late 2020. The scoping exercise and the preparation of the assessment(s) would be supported through regional workshops that will, among other things, help to identify regional priorities.

Subsequently, the General Assembly endorsed the recommendations of the Ad Hoc Working Group of the Whole that there should be a single comprehensive assessment during the second cycle of the Regular Process.[4] The present document is

[1] Resolution 64/71, para. 177, endorsing A/64/347, annex, para. 7.
[2] Resolution 64/71, para. 177, endorsing A/64/347, annex, para. 19. See also resolution 72/73, para. 302.
[3] Resolution 71/257, para. 299, endorsing A/71/362, attachment, para. 5.
[4] Resolution 72/73, para. 304, endorsing A/72/494, para. 16 (t).

that single, comprehensive assessment. The method of work adopted to deliver the assessment will be described in an attachment.

(b) Approach of the assessment

1. The second world ocean assessment therefore aims to give a picture of the state of the world's marine environment, including socioeconomic aspects, based on the developments since the baseline set out in World Ocean Assessment I and using the elements of the drivers–pressures–state–impacts–response (DPSIR) model. The assessment:

- Sets out the relevant ***drivers***, and
- Describes the trends in the current ***states*** of the main components of the marine environment,
- Resulting from the developments in the effects of the many ***pressures*** and their ***impacts***,
- And the developments in the effects of the management measures adopted in ***response***.

2. The assessment then reviews developments in means of responding in a multifaceted way to multiple pressures simultaneously affecting components of the marine environment, and finally considers emerging issues.

(c) Further detail on the DPSIR approach and ecosystem services (including definitions of provisioning services, regulating services, cultural services and supporting services)

Chapter 3: Scientific understanding of the ocean

- The importance of marine scientific research;
- Recent step-change improvements in understanding the ocean, including:
  - Physical and chemical properties of the ocean;
  - Ocean bathymetry;
  - Ocean circulation;
  - Effects on biota of anthropogenic noise;
  - Sources of marine debris.

Part 3: Drivers of changes in the marine environment

Chapter 4: Drivers

- Developments in human population (especially populations in coastal areas);
- Development aspirations:
  - Food security and food safety;
  - Resource use (including demand for metals and hydrocarbons and the use of marine genetic resources);

- Energy;
- Transport;
- Leisure and recreation;

- Drive to sustainability (including the Sustainable Development Goals);
- Cultural needs and aspirations;
- Contributions from improved technologies.

Part 4: Current state of the marine environment and its trends

Chapter 5: Trends in the physical and chemical state of the ocean

(a) **Sea temperature**, both at the surface and at depth;

(b) **Sea levels**;

(c) **Salinity, both at the surface and at depth**;

(d) **Ocean circulation, including stratification, mixing, upwelling, boundary currents, and gyres and oscillation patterns (such as El Niño, La Niña and the North Atlantic Oscillation)**;

(e) **Sea ice**;

(f) **Ocean chemistry, including ocean acidity**;

(g) **Dissolved oxygen**.

Chapter 6: Trends in the biodiversity of main taxa of marine biota

(Biodiversity of taxa will be described in terms of abundance, distribution, productivity and diversity within the taxon)

(a) **Plankton**, including:

- Phytoplankton;
- Zooplankton;
- Microbes and viruses;

(b) **Marine invertebrates**;

(c) **Fish**;

(d) **Marine mammals**;

(e) **Marine reptiles**;

(f) **Seabirds**;

(g) **Marine plants**;

(h) **Macroalgae**.

Chapter 7: Trends in the state of biodiversity in marine habitats

(a) Sand and mud substrates (soft bottom);

(b) Rocky substrates and reefs;

(c) Intertidal zone;

(d) Atoll and island lagoons;

(e) Tropical and subtropical coral reefs;

(f) Cold water corals;

(g) Estuaries and deltas;

(h) Kelp forests and algal beds;

(i) Seagrass meadows;

(j) Mangroves;

(k) Salt marshes;

(l) Submarine canyons;

(m) High-latitude ice (including that over areas of open ocean);

(n) Seamounts and pinnacles;

(o) Abyssal plains;

(p) Open ocean;

(q) Ridges, plateaus and trenches;

(r) Hydrothermal vents and cold seeps;

(s) Sargasso Sea.

Chapter 8: Trends in the state of human society in relation to the ocean

(a) Coastal communities, including the coastal population, the size of coastal communities, their wealth/income, their vulnerability and adaptability to and dependency on the ocean (including dependence on, and engagement with, marine resources);

(b) Human health as affected by the ocean, including the health of coastal communities relative to inland communities, the effects of exposure to contaminated seawater, the scale of beach closures for health reasons and the extent to which food resources available from the sea create health problems through the content of hazardous substances (including metals, microplastics and nanoparticles) and pathogens in them;

(c) Maritime industries, including their economic performance, the role of freight transport in international trade, the role of ferries and coastwise shipping in internal transport, recruitment of workers, the proportion of their workers who are women, the rates of death of, and injury to, their workers, the protection of their working conditions, their levels of pay, maritime security, human trafficking, slavery and smuggling, access to markets and handling

facilities for fisheries produce and the proportion of fisheries that are artisanal, culture-related or conducted by indigenous peoples.

(d) Maritime cultural services, including the extent to which marine cultural resources are conserved, support for cultural activities linked to the sea, and the scale of use of objects from the sea that are valued for cultural reasons.

Part 5: Trends in pressures on the marine environment

(Each chapter section in this part should include discussion of: (a) the impacts both on marine biota and habitats and on humans, (b) management measures (both adaptive and mitigatory) taken in response, and (c) the interplay between all terrestrial ecosystems (including mountain, hill, lowland and coastal ecosystems) and the ocean)

Chapter 9: Pressures from changes in climate and atmosphere

(a) Physical properties of the ocean, including effects on the distribution and seasonal cycles of biota and coastal communities (including sea level rise);

(b) Ocean chemistry, including calcium carbonate production and the effects on biota, beaches and atolls;

(c) Extreme climate events, including their impacts on biota, beaches, coastal communities, shipping and marine infrastructure (including submarine cables and pipelines).

Chapter 10: Changes in inputs to the marine environment of nutrients

- From land;
- From ships and offshore installations;
- And consequent levels of eutrophication problems in the marine environment, including harmful algal blooms.

Chapter 11: Changes in liquid and atmospheric inputs to the marine environment from land (including through groundwater), ships and offshore installations

(a) Persistent organic pollutants (including run-off from the use of agricultural pesticides);

(b) Metals;

(c) Radioactive substances (including naturally occurring radioactive material (NORM));

(d) Personal care products, pharmaceuticals and nutraceuticals;

(e) Atmospheric pollutants (NOx (but not in its role as a nutrient) and SOx);

(f) **Hydrocarbons from terrestrial sources, ships and offshore installations (including arrangements for response to spills and discharges)**;

(g) **Other substances used on, and discharged from, offshore installations**;

(h) **Distribution of, and trends in, contaminant concentrations**.

Chapter 12: Changes in inputs and distribution of solid waste in the marine environment (other than dredged material)

- Dumping at sea (including garbage from ships and sewage sludge);
- Activities resulting in marine debris, including plastics, abandoned fishing gear, microparticles and nanoparticles, and estimates of the sources from land, ships and offshore installations.

Chapter 13: Changes in erosion and sedimentation

- Changes in river management (including dams) affecting the amount of sediment and water delivered to the ocean, and coastal erosion;
- Changes in land use resulting in changes in erosion patterns;
- Beach nourishment.

Chapter 14: Changes in coastal and marine infrastructure

- Amounts of land reclaimed from the sea;
- Extent of new land defences against the sea, and extent of sea defences abandoned;
- Extent of coastal development, including development for tourism;
- Other adaptations affecting coastal populations as a result of sea level rise;
- Changes in port installations and their management, including dredging;
- Changes in submarine cables and submarine pipelines.

Chapter 15: Changes in capture fisheries and harvesting of wild marine invertebrates

- Levels of catches of fish, after allowing for the effects of management measures (including the effects of estimated levels of fisheries subsidies (both capacity-enhancing and beneficial subsidies)):
  - Within national jurisdiction (by commercial fisheries and by artisanal (otherwise called small-scale) and subsistence fisheries);
  - Beyond national jurisdiction (including the effects of fisheries beyond national jurisdiction as a result of the exhaustion of fisheries within national jurisdiction);
- Levels of harvesting of marine invertebrates (including shellfish);

- Levels of by-catch and other impacts on vulnerable marine ecosystems and benthic ecosystems;
- Levels of post-harvest loss;
- Levels of fish-stock propagation;
- Use of marine protein in agriculture and aquaculture;
- Estimated levels of illegal, unregulated and unreported (IUU) fisheries;
- Levels of non-food harvesting.

Chapter 16: Changes in aquaculture

- Changes in the areas of the seabed covered with aquaculture installations;
- Changes in the quantities produced by marine aquaculture of:
  - Fish;
  - Invertebrates (including shellfish);
- Changes in the management of marine aquaculture, including effects on wild fish populations, in the proportions of fish meal and vegetable feed used and the quantities of pesticides used.

Chapter 17: Changes in seaweed harvesting and use

- Changes in the level of wild seaweed harvesting;
- Changes in the level of seaweed cultivation;
- Developments in uses of seaweed.

Chapter 18: Changes in desalinization and in the production of sea salt

Chapter 19: Changes in seabed mining

- Effects of technological improvements;
- Mining within national jurisdiction:
  - For metals;
  - For sand and aggregates;
  - For other substances (for example, diamonds);
- Mining beyond national jurisdiction.

Chapter 20: Changes in hydrocarbon exploration and extraction

- Including coverage of new exploration zones and new fields,
- But not including noise effects (see chapter 21) and,

- Not including discharges and emissions (see chapter 11);
- Decommissioning of offshore installations.

Chapter 21: Trends in inputs of anthropogenic noise to the marine environment, including improved understanding of its effects across all species — see chapter 3.

Chapter 22: Developments in renewable energy sources, including:

- Geothermal energy;
- Solar energy;
- Tidal energy;
- Wave energy;
- Wind energy.

Chapter 23: Developments in marine transportation

- Ferries;
- Other coastwise shipping;
- International freight transport, including effects of containerization;
- Cruising;
- Ship-breaking;
- Bunkers;
- (But discharges and emissions from ships, garbage, sewage and transport of invasive species are covered in the chapters dealing with those subjects).

Chapter 24: Developments in tourism and recreation activities

Chapter 25: Invasive species, including transport in ballast water and on ships' hulls

Chapter 26: Developments in exploration and use of marine genetic resources

Chapter 27: Marine hydrates — a potentially emerging issue

Chapter 28: Cumulative impacts

Part 6: Trends in management approaches to the marine environment

Chapter 29: Developments in marine spatial planning

Chapter 30: Developments in management approaches

- Ecosystem-based management approaches;
- Culturally-based management approaches;
- Community-based management approaches;
- Area-based management tools, including marine protected areas and special areas (such as special areas under the International Convention for the Prevention of Pollution from Ships (MARPOL) and Particularly Sensitive Sea Areas);
- Adaptation to climate change and resilience-building.

Chapter 31: Developments in the understanding of overall benefits from the ocean to humans, including the distribution of those benefits and the role in safeguarding those benefits of improved implementation of international law, as reflected in the United Nations Convention on the Law of the Sea.

Annex II

Guidance for contributors
Part II

Transmittal note by the Group of Experts of the Regular Process

The Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects approved part I of the guidance for contributors for the second cycle of the Regular Process at its ninth meeting, held in September 2017 (A/72/494, annex IV). The General Assembly took note of part I of the guidance in paragraph 304 of its resolution 72/73.

Part I covers the working arrangements for the Group of Experts of the Regular Process, lead members, writing teams and others.

Much of the remainder of the guidance for contributors for the first cycle was concerned with the internal structure of the First Global Integrated Marine Assessment (World Ocean Assessment I) and the means of integrating different aspects that it considered. This was linked strongly to the structure of World Ocean Assessment I and its role in providing a baseline assessment. Equivalent material does not seem to be needed for the second cycle.

Some further material that was contained in the guidance for contributors for the first cycle remains relevant to the production of the assessment, which is to be the main output of the second cycle of the Regular Process.

The Group of Experts has reviewed this material and produced the present draft of part II of the guidance for contributors. It recommends this draft to the Bureau and the Ad Hoc Working Group of the Whole for consideration to form part II of the guidance for contributors for the second cycle of the Regular Process. This completes the response of the Group of Experts to the request of the General Assembly in paragraph 310 of its resolution 71/257 that it review the guidance for contributors.

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Part II of the guidance for contributors

[Continued from A/72/494, annex IV]

G. World and regions

42. The prime audiences for the assessment are policymakers at the national, regional and global levels. The focus of draft chapters must therefore be to provide an assessment that will be useful to such policymakers. The aim is not to duplicate or reinterpret regional or thematic assessments, but to put trends and data gaps into context, showing both commonalities at the global scale and regional differences. Existing regional, subregional and thematic assessments should be identified and used where available and relevant. It will therefore be important for writing teams to strike the right balance between aggregating material at the global level and providing detail about the regional and national levels. The assessment must give a balanced view of the world's oceans as a whole, and not focus on regions for which there may be abundant and/or readily available information.

II. Risk

43. "Risk" can be formally defined as the product of the likelihood of an event and the seriousness of the event if it were to occur. Risk assessments included in World Ocean Assessment I will need updating and significant new risks will need to be identified and evaluated in the second world ocean assessment. In all assessments, when a risk is being described, both the likelihood and the potential severity of each consequence should be made as clear as possible. Where "potential severity" is actually a range of possible outcomes, "worst case" scenarios should be clearly differentiated from other potential outcomes of similar or possibly higher likelihood.

44. There are several ways that risk can enter into decision-making. One is the risk that some pressure, either a natural event or a human activity, will have some undesirable consequence if it is not managed or mitigated effectively. Another is the risk that such management or mitigation could have its own undesirable impacts on some other ecosystem feature or benefit. Assessments should always consider both these aspects of risk.

45. The details of how this will be done should be case-specific, as there are many tools for quantifying and communicating risk. The selection of the appropriate method of reporting risk depends on the quantity and quality of data and information that is available. Where a degree of risk is expressed, sufficient information should be given for that expression to be interpreted.

46. Given that the aim of the assessment of the second cycle of the Regular Process is to integrate information on diverse pressures and ecosystem properties globally and supraregionally, it is expected to have to accommodate a wide range of data quality and quantity and of knowledge of relationships and impacts. There will be no single best approach, therefore, to risk quantification and communication. In reviewing draft chapters, the Group of Experts will consider how risk has been quantified and communicated by contributors, including to ensure the standardization of such considerations throughout the assessment.

I. Characterizing and communicating uncertainty

47. Some of the conclusions of the assessment produced by the second cycle of the Regular Process may be controversial. As such, they will be subject to intense scrutiny by stakeholders. However, all parts of the report must be as accurate as possible since an error in any part can undermine the credibility of the entire report. To this end, contributors must exercise caution and discipline in describing the uncertainty associated with any statements made in their chapters.

48. Uncertainty is characterized and communicated by describing how much is known about a topic (that is, the quality and nature of the evidence available) and the likelihood that a particular event will occur. Each conclusion will need to be accompanied by a judgment of its uncertainty. There are several different ways to express uncertainty: the likelihood of an event happening; the degree of confidence that the evidence supports the conclusion; the level of understanding of the processes being described; and the degree of acceptance by experts of the conclusion.

49. The level-of-understanding scale is a convenient way of communicating the nature, number and quality of studies on a particular topic, as well as the level of agreement among studies. This scale can be supplemented by quantitative likelihood or confidence measures, if such are deemed to be needed and appropriate.

50. Contributors are encouraged to make statements about the likelihood of an outcome or event as explicit as possible, but must ensure that the methods that they use for estimating or otherwise evaluating probabilities or likelihood (such as expert judgment, analysis of data and modelling) are appropriate to the quantity, quality and nature of the information available.

51. Contributors should avoid reporting conclusions with high levels of confidence for which there is little evidence, and should always seek clarity when making definitive statements. All conclusions should withstand scrutiny and be supported sufficiently by the available information cited in the assessment. In reviewing draft chapters, the Group of Experts will consider such conclusions and related supporting information, including to ensure that the same standards are applied throughout the assessment.

J. Handling the full range of views

52. An assessment is intended to arrive at a judgment of a topic. Although all reasonable points of view should be considered, they need not be given equal weight or even described fully in a draft chapter. The writing teams should be composed of contributors with diverse viewpoints as a first step towards ensuring that a full range of views is considered. The writing teams should also be fair and objective in their consideration of the information available for assessment.

53. It is important to avoid "confirmation bias", that is, the tendency of authors to place too much weight on their own views relative to other views. Writing teams should explicitly document a wide range of scientific viewpoints and ensure that due consideration is given to properly documented alternative views.

54. There can be multiple interpretations of the available body of information, each with support from some portion of the scientifically sound information but inconsistent with other portions. Policymakers are often best served by being informed of the nature of the discrepancies in the scientific and technical information, the range of interpretations that cannot be rejected and the implications, including risks, of each interpretation. The assessment should ensure that these nuances are brought out.

K. Attribution

55. The sources of all information in the assessment should be documented and given proper attribution.

56. Writing teams must ensure that copyright permissions for all diagrams, figures and tables are obtained and fully documented. A filing system will be established by the Group of Experts to bring together all such permissions, and writing teams must enter in it the permissions that they have acquired no later than when submitting the draft chapter.

57. It is the responsibility of the contributors to ensure that proper attribution is provided for all sources of information cited, as well as providing evidence of copyright permissions for all diagrams, figures and tables included in their contribution. The convenor, in collaboration with the lead member (if separate), will be responsible for ensuring that each contributor complies with these requirements. The writing teams will be requested to replace any text where such problems arise, with revised text that avoids them. In the course of the review of the draft chapters, attention will be paid to ensuring that attribution and copyright requirements are complied with to the same standard throughout the assessment.